UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,413	01/10/2002	Vladimir I. Miloushev	6097-0003-US	9045

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EXAMINER
PRIETO, BEATRIZ

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/043,413	MILOUSHEV ET AL.
	Examiner	**Art Unit**	
	Prieto B.	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>06 July 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-8,19 and 34-54</u> is/are pending in the application.

    4a) Of the above claim(s) <u>1-8,19 and 34</u> is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>35-54</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>10 January 2002</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>12/02 & 4/02</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

DETAILED ACTION

1.   This communication is in response to election requirement filed 07/06/05, claims of Group III (35-54) has been elected, thereby claims 1-8, 19, and 34 (withdrawn from consideration), and claims 9-18, 20-33 have been canceled.

2.   Information Disclosure Statement filed 12/20/02 and 4/08/03 have been considered, initialed and enclosed accordingly. To overcome this type of rejection the claims need to be amended to include only the physical computer media or embodied on computer readable media medium, e.g. the computer-readable recording medium storing the program for performing the method, etc.

Claim Rejection under 35 USC 101

3.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4.   Claims 35-54 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

The method claims 35-44 and apparatus claims 45-54 are not limited to tangible embodiments. In view of Applicant's disclosure, specification page 22, which describe where the functionality of the file switch may be implemented in software, in hardware or any combination of software and hardware, as appropriate, the medium is not limited to tangible embodiments. As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

To overcome this type of rejection the claims need to be amended to include only the physical computer media or embodied on computer readable media medium, e.g. the computer-readable recording medium storing the program for performing the method, etc.

Claim Rejection under 35 USC 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6.   Claim 35 is rejected under 35 U.S.C. 102(e) as being anticipated by Wang et. al. (US 6,826,613) (Wang hereafter)

Regarding claim 35, Wang teaches a system (10) comprising:

a group of client computers (10) coupled by a communication medium to a group of file servers (130) (Wang: col 3/lines 41-45) through a device (120) in a computer network (Wang: col 4/line 20-25, 39-46), the device comprising a switch (226) (col 6/lines 2-12);

aggregating directories of multiple file systems in the group of file servers by presenting them as a single directory, i.e. accessible via a single identifier (Wang: 21/lines 23-40, col 18/lines 3-13); and

aggregating file objects of the multiple file systems in the group of file servers (Wang: col 21/lines 23-40) by presenting them as a single file object (Wang: col 1/lines 45-50, col 2/lines 21-34, 50-52, col 20/lines 47-54).

Claim Rejection under 35 USC 103

7. . The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 36-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et. al. (US 6,826,613) (Wang hereafter) in view of Thomas (US 5,838,970).

Regarding claims 36, Wang teaches aggregating the namespace of the multiple file systems by:

storing a map in file switch (col 7/lines 35-45);

a switch configured to handle requests between a plurality of client and storage devices (col 6/lines 1-12), the switch storing a directory associated with the plurality of storage devices (col 7/lines 35-45), and

coupling a group of clients to a group of file servers through a switch in a computer network (col 6/lines 1-12);

receiving a file access transaction from a client (col 7/lines 35-45), comprising a packet (col 4/lines 53-58), the file access transaction including the a selected server hosting requested file in the group of file servers (col 11/lines 1-10), a file name and a path name (e.g. an address) (col 8/lines 10-11, 19-22) applying the set of name-mapping rules to the user path name to generate a "server path" name, i.e. an address (col 7/lines 35-45, col 8/lines 47-52) to the device hosting the file (col 8/lines 49-52, 24/lines 49-53); and

executing the file access transaction in accordance with the selected server by accessing the selected server hosting requested file (col 17/lines 1-31) via file access protocols (col 17/lines 41-53); although Wang teaches where the client's request include an address, he does not explicitly teach where the request includes a file name;

Thomas teaches a system (20) comprising coupling a client computers (30) (col 2/lines 26-29) to file servers (24) though a device (22) in a computer network, the network comprising

receiving a file access transaction request from a client, including a object identifier and any required parameters (col 2/lines 26-32);

a repository (36/24) containing transaction relate information for a particular object (col 6/lines 27-45, col 8/lines 37-56), including a file name and server path name (col 15/lines 44-col 16/line 9);

applying the information at the repository "set of name-mapping rules" to generate a server path name, i.e. an address (col 9/lines 1-56, col 15/line 44-col 16/line 9);

It would have been obvious to one ordinary skilled in the art at the time the invention was made given the teachings of Wang for coupling a group of client to a group of file server through a device in a computer network, the teachings of Thomas for providing clients access to plurality of storage device through a device, would be readily apparent. One would be motivated to given the suggestions by Wang for utilizing other mapping-lookup indexing resource table or cross reference means for determining the location of a requested file and Thomas suggestion of including in user request an identified desired file and any other required parameter, one would be motivated to enable the switch in the Wang system with the repositories taught by Thomas or a combination thereof, such information indicating where the transaction operations executable are located including identifying where the requested files are located and information to access and executed requested operation such the executable file name, the exact file

path name, and the type of file and the network protocol over which the file is accessible all located or accessible by the switch, that way the system component accessible are always accessible using the same reference, consequentially, the system is transparently to the user scalable and components may be easily relocated, as suggested by Thomas.

Regarding claim 37, "rules" comprise correspondence between path names and server path names (Thomas: repository (36) col 15/line 11-col 16/line 9 and repository (24) col 9/lines 1-56)

Regarding claim 38, applied to the rules discussed on claim 37, lookup using the file name provided in client's request to select, i.e. "comparing for a match" (Wang: col 7/lines 35-45)

Regarding claim 39, comprising limitations discussed on claim 36, same rationale of rejection is applicable, further selecting a set of file servers among the group of file servers in response to a desired transaction operation (Wang: abstract), transaction operations include storing the user file (Thomas: col 2/lines 19-22, 59-65); determining a file path for each selected file server (Thomas: col 9/lines 1-41);

updating, in the file switch, information identifying the set of file servers and the file paths corresponding to the user file and updating the directories on the set of file servers to indicate storage of the user file (Thomas: col 2/lines 19-22, 59-65).

Regarding claim 40, having the same limitations discussed on claim 35, same rationale of rejection is applicable. Further, receiving a file access request from the client including the user file name (Thomas; col 2/lines 26-32); mapping the file name with one file server in the set of file servers using information having a correspondence between a set of file servers and the file paths the requested user file (Wang: col 7/lines 35-45).

Regarding claim 41, determining includes mapping the user file path into a corresponding server file path in the set of file servers in accordance with a predetermined set of mapping rules (Thomas: repositories (36/24) containing transaction relate information for a particular object (col 6/lines 27-45, col 8/lines 37-56), including a file name and server path name (col 15/lines 44-col 16/line 9).

Regarding claim 42, performing the file transaction operation described discussed on claim 36 as a file access transaction in this case as a file object update request, updating, in the file switch, information identifying the set of file servers and the file paths corresponding to the user file and updating the

directories on the set of file servers in response to file object request (Thomas: col 2/lines 19-22, 59-65, col 16/lines 48-67).

Regarding claim 43, mapping file access transaction request as discussed on claims 35-36, same rationale of rejection is applicable, including receiving files access request from client including file name and file path as discussed above, file access to file hosted by selected server in accordance with NFS or CIFS protocols, i.e. client devices can assert read/write requests in a known manner via the NFS communication protocol to the file server, the file server responds to read requests 24 in accordance with conventional practice, to provide the client devices with access to digital data files stored on the disk media 1090-1092, during write operations, the file server responds to enable the client devices to write selected data onto the disks (Wang: col 16/lines 60-col 17/line 31).

Regarding claim 44, the file objects include at two file objects consisting of "creation" version date, last "modification" update date (Thomas: col 18/lines 53-64).

Regarding claim 45, comprises limitations discussed on claims 35-37, same rationale of rejection is applicable, further, one processor configured to execute computer programs (logic), one port (228-229) adapted to exchange information with the file servers and client computers (Wang: col 6/lines 39-45), the information exchanged including information concerning a specified file data (Wang: col 4/lines 20-58).

Regarding claims 46-51, these claims are substantially the same as claims 36-41, same rationale of rejection is applicable.

Regarding claims 52-54, this claim is substantially the same as claims 42-44, same rationale of rejection is applicable.

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Citation of Pertinent Art:

7.   The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Copies of Non-Patent Literature documents cited will be provided as set forth in MPEP§ 707.05(a):

A. CSA Persistent File System Technology, Colorado Software Architecture, Inc. White Paper, Jan. 1999, p. 1-3.

This paper discloses aggregating directories of multiple file systems in a group and presenting them as a single directory, and aggregating file objects of multiple file systems and presenting then as a single file object.

B. US 5,590,320

Maxey teaches aggregating directories of multiple file system and presenting them as single "directory" physical volume.

C. US 6,922,688

Frey et. al. teaches aggregating directories of multiple file system including aggregating the namespace of the multiple directories of multiple file system and presenting them so as to a client may assess them as a single directory, e.g. combining system namespaces of directories of multiple file systems.

D. US 5,692,180

Lee teaches an object-oriented cell directory database for a distributed computing environment, presents a set of resources a single entity, by present using a common cell name and namespace. In a distributed computing environments (DCE) comprises a server and the clients 16. The set of connected machines share a common cell name, and a unified (aggregated) namespace. The naming service is used by application servers to store their location and interfaces, known as server bindings (i.e. name-mapping).

E. US 5,218,695

Noveck et. al. teaches a File server system, including receiving a file access request including client devices can assert read/write requests in a known manner via the NFS network 16 to the file server 12. The file server responds to read requests 24 in accordance with conventional practice, to provide the client devices 18 and 20 with access to digital data files stored on the disk media 14a-14d incorporated in the file server 12. Digital data is transferred via digital data lines 22. During write operations, the file server 12 responds in a manner set forth below, to enable the client devices to write selected data onto the disks.

F. US 6,757,706

Dong et. al. teaches a path name, such as an URL comprising two parts, one being the protocol name and the other being the path name of the accessed object, wherein for example, the URL "http://www.ibm.com" specifies the server path "www.ibm.com". The server path name corresponds to a unique IP address, all data transmission on the Internet is performed by IP address.

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prieto, B. whose telephone number is (571) 272-3902. The Examiner can normally be reached on Monday-Friday from 6:00 to 3:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's Supervisor, Andrew T. Caldwell can be reached at (571) 272-3868. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800/4700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system, status information for published application may be obtained from either Private or Public PAIR, for unpublished application Private PAIR only (see http://pair-direct.uspto.gov or the Electronic Business Center at 866-217-9197 (toll-free).

Any response to this action should be mailed to:
        Commissioner of Patents and Trademarks
        P.O. Box 1450
        Alexandria, VA 22313-1450

Hand carried or delivered to:
        Customer Service Window located at the Randolph Bldg.
        401 Dulany St.
        Alexandria, VA 22314

Faxed to the Central Fax Office:
        (703) 872-9306 (old No. in service until Sept. 15, 2005),
        (571) 273-8300 (New Central Fax No.)

Or Telephone:

        (703) 306-5631 for TC 2100 Customer Service Office.

BEATRIZ PRIETO
PRIMARY EXAMINER

August 18, 2005